

# Reliable<sup>®</sup>

## CORROSION INHIBITING SOLUTIONS

For Dry and Preaction  
Fire Protection Systems



# THE CORROSION PROBLEM. SCIENTIFIC FACT.

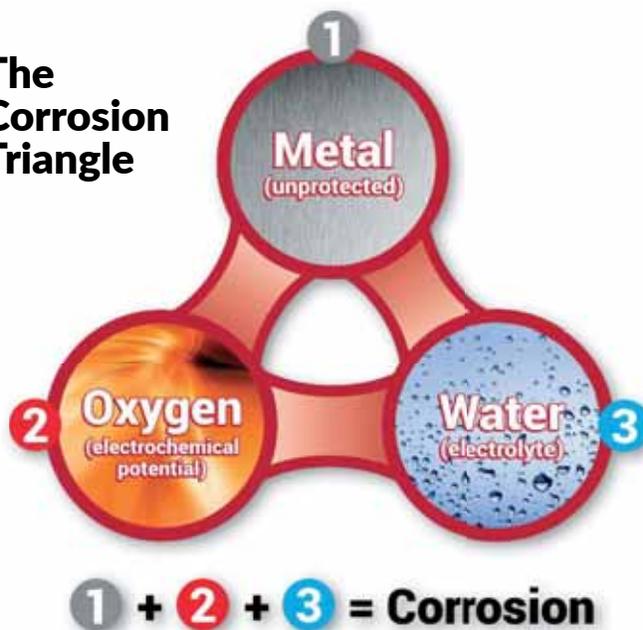
## The Facts on Corrosion:

- Dry and preaction systems are involved in 59% of fire losses caused by corrosion-related obstructions to sprinkler flow (FM Global).
- 73% of dry and preaction systems inspected had significant corrosion issues after 12.5 years (VdS Study).
- Corrosion leads to property damage, ongoing pipe repair and replacement, decreased c-factor and sprinkler blockage - potentially rendering the system inoperable in the event of a fire. These costs along with the hard and soft costs associated with disrupting your organization's operation are significant.

**An industry leading Nitrogen system offers you the solution.**



## The Corrosion Triangle



### 1. METAL

- Results in a uniform wall - thinning corrosion mechanism in black steel
- Results in a localized pitting corrosion mechanism in galvanized steel

### 2. OXYGEN

- There is an inexhaustible source of oxygen in compressed supervisory air

### 3. WATER

- Comes from residual water and moisture left behind after hydro test

**Replacing air and oxygen in a sprinkler system with nitrogen, inhibits corrosion by removing a segment of the corrosion triangle.**

# PIPE CORROSION AND TESTING RESULTS.

## Long-Term Exposure Testing.

Industry leading and ongoing tests over the past eight years by a Third Party (official report available on request) comparing the performance of black and galvanized steel sprinkler pipe in compressed air and nitrogen gas environments have yielded the significant results detailed below. The test environment is comprised of half-filled Schedule 10 black and galvanized steel sprinkler pipe sections individually subjected to either compressed air or 98% nitrogen supervision.

SCHEDULE 10 BLACK STEEL (7.9 YEARS)		SCHEDULE 10 GALVANIZED STEEL (7.9 YEARS)		
	As Received	Cleaned	As Received	Cleaned
COMPRESSED AIR	 Black Steel Compressed Air 07000 - 07001	 Black Steel Compressed Air 07000 - 07001	 Galvanized Steel Compressed Air 07000 - 07001	 Galvanized Steel Compressed Air 07000 - 07001
	20.7 Years Projected Service Life		9.9 Years Projected Service Life	
98% NITROGEN	 Black Steel 98% Nitrogen 07000 - 07001	 Black Steel 98% Nitrogen 07000 - 07001	 Galvanized Steel 98% Nitrogen 07000 - 07001	 Galvanized Steel 98% Nitrogen 07000 - 07001
	63.2 Years Projected Service Life		176 Years Projected Service Life	

**As a result of 98% nitrogen in lieu of compressed air supervision:**

**The projected service life for Schedule 10 black steel pipe  
can be increased from 20 to 63 years.**

**The projected service life for Schedule 10 galvanized steel pipe  
can be increased from 10 to 176 years.**

# N<sub>2</sub>-BLAST® NITROGEN GENERATORS.



**Reliable®**



*South-Tek N<sub>2</sub>-Blast® Nitrogen Generator fitted to a Reliable Model DDX PrePak Preaction System and Model DDX Preaction Valve.*



**N<sub>2</sub>BLAST®**



## Award Winning Corrosion Inhibiting System.

Minimum Nitrogen Purity: 98%

Introducing the N<sub>2</sub>-Blast® - Corrosion Inhibiting System, recipient of the NACE corrosion innovation of the year award. Designed and manufactured by South-Tek Systems, the world leader in nitrogen generation technology. The N<sub>2</sub>-Blast® generates and introduces 98%+ pure nitrogen into the dry or pre-action fire protection system. In doing so, oxygen, a key contributor to corrosion, is displaced from the piping through the AutoPurge System™. The N<sub>2</sub>-Blast® effectively inhibits electrochemical, galvanic and micro-biologically influenced corrosion (MIC), as well as freeze-ups and ice plugs.

### South-Tek Reliability

South-Tek has been a pioneer and leader in the nitrogen generation and solution space since 1997. As the only provider of dual-bed PSA nitrogen separation technology, South-Tek's nitrogen generators yield an efficient 2:1 air to nitrogen ratio. Requiring less feed air to generate the same amount of nitrogen and allowing the feed air compressor to run at lower pressures and temperatures ultimately maximizes the life of the feed air compressor and other integral components. PSA technology also provides 98%+ purity for longer— to the tune of 20+ years. And because South-Tek's nitrogen generators are sized to NFPA 25 leak rates (3 psi [0.2 bar] in 2 hours), they produce significantly more nitrogen and run less frequently, ensuring maximum system longevity.

# THE TECHNOLOGY.

## The Technology.

As the only provider of dual-bed Pressure Swing Adsorption (PSA) nitrogen separation technology to the Fire Protection Industry, South-Tek's nitrogen generators yield an efficient 2:1 air to nitrogen ratio versus the 3:1 ratio of competing membrane systems. Requiring less feed air to generate the same amount of nitrogen and being tied to NFPA leak rates allows the feed air compressor to run at a lower pressure and temperature than it would in a membrane system, ultimately maximizing the life of the compressor and other integral components. PSA technology is also longer lasting—to the tune of 20+ years- because it uses Carbon Molecular Sieve (CMS) material to extract oxygen from the air under pressure and capture nitrogen instead of using weaker membrane hollow fibers which break down quickly. South-Tek's PSA technology has been battle tested in the most challenging military and industrial applications in the world resulting in a solution the Fire Protection Industry can rely upon. *(Further Product Specifications Available Upon Request)*

## AutoPurge System™

Patented, adjustable and fully pneumatic, it cycles Nitrogen continuously throughout to maximize corrosion protection and help dry out residual moisture. Can be installed anywhere throughout the length of the system, including in the riser room.

South-Tek, like most manufacturers in the fire protection industry, *recommends* the device be placed at a remote point. This is the easiest way to both prove high purity Nitrogen is flowing throughout the system, as well as providing assurance there are no water traps, ice plugs, or other blockages.



## SMART-Trak™

South-Tek's exclusive SMART-Trak™ technology allows you to remotely monitor the nitrogen generator from any mobile device. View information such as trending FPS leak rate, equipment runtime, time in air bypass mode, current system status, and maintenance reminders all through the SMART-Trak™ mobile application.

## Feed Air Compressors.

Compressors designed to meet 30 minute fill time requirements for systems up to 3,000 gallons (11,350 L) at 40 psi (2.76 bar) and 6,000 gallons (22,700 L) at 20 psi (1.38 bar).

*(Further product specifications available upon request.)*



*Typical System Installation.*

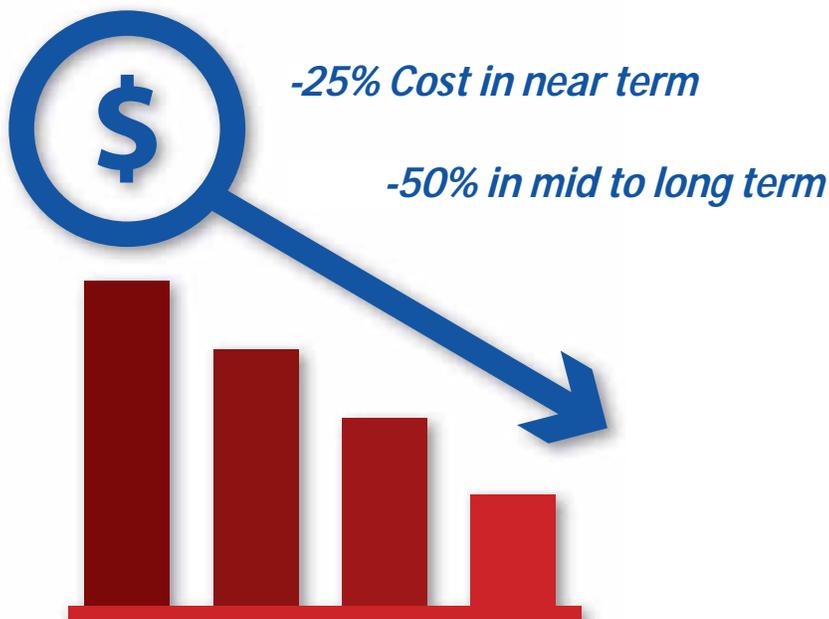
# ROI & BENEFITS.

## A variety of Dry and Preaction Systems exist, and within each one is an ROI ready to be unlocked.

System sizes and configurations change, but since the facts behind the corrosion problem and nitrogen solution do not, the economic and operating benefits for both you and your customer are there for the taking.

### Consider this scenario:

- Maintenance cost for a facility with 1-2 Dry Systems more than 4-5 years old is between \$300-\$800 per month.
- Selective pipe replacement and a nitrogen generator easily reduces that cost \$100-\$200 per month during the first 60-90 days after installation.
- Thereafter nitrogen supervision reduces the corrosion rate to a negligible amount increasing the savings over time vis-vis systems without nitrogen and their inevitable corrosion, pipe degradation and leaks.
- That's a potential cost reduction of 25% in the near term and 30-50% in the mid to long term.
- Beyond basic maintenance, consider the cost of ongoing selective and eventual full pipe replacement without nitrogen. And in newly installed fire protection systems, corrosion never even gets a chance, thereby preserving your asset for the long term. Now consider all the following economic and operating benefits.



# ROI & BENEFITS.

## Contractor Benefits:

1. Increased opportunity for proactive instead of reactive service with customers. Fewer leaks and emergency problems means more efficient scheduling and use of your resources.
2. Increased customer loyalty generated from the understanding that your service is the reason for fewer leaks and problems as well as \$ savings for them. Satisfaction that drives lifetime value of your customers.
3. More competitive and/or high margin contracts due to a reduction in maintenance problems that result from bringing the nitrogen solution to your customers - put \$ in your pocket or pass along to your customers.
4. More opportunity to hunt new customers instead of servicing existing customers.
5. Stronger position in next down cycle to combat more aggressive competitors going after your service and maintenance business.
6. Reliable & South-Tek Certification program providing best estimate, install and service practices.
7. The option to use black steel pipe with nitrogen as a superior solution to galvanized.
8. Longer lasting and more reliable nitrogen technology with lower equipment cost to repair, replace or service.

## End Customer Benefits:

1. Lower pipe repair and replacement costs.
2. Reduced monthly maintenance costs by 25% near term and 30-50% mid to long term.
3. More predictable monthly maintenance costs.
4. Less business interruption due to fewer leaks, problems and maintenance.
5. Reduced liability related to a system not functioning properly.
6. Reduced threat from a potential catastrophic problem due to corrosion.
7. Drastically lower long-term expense for full pipe replacement.
8. Having a fire protection system & partner you can trust.



ROI



Customer  
Satisfaction



Operating  
Efficiency



New Customers



Decrease in  
- Liability  
- Costs  
- Unpredictability



## North American Sales and Distribution

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## Technical Services

[techserv@reliablesprinkler.com](mailto:techserv@reliablesprinkler.com)  
800.557.2726



**South-Tek Nitrogen +  
Reliable Systems =  
The Perfect Package.**

*For more about the Corrosion Problem and  
the Nitrogen Solution please contact Reliable.*

**Let's Discuss The Opportunities.**

[www.reliablesprinkler.com](http://www.reliablesprinkler.com)